
sima[®]

**Charger/Reconditioner
for 8mm and VHS-C
4.8 & 6V Camcorder Batteries**

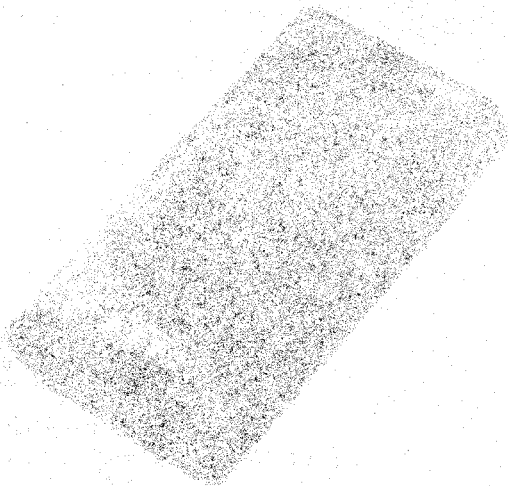
Model SPM-12N



User Manual

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Introduction Congratulations! You have purchased one of the most innovative products on the market today. It is designed to safely rapid charge video battery packs using 110/115V AC (house current) or 12V DC (car cord).

- Compatibility with Sony®, Sharp® Twin Lens, Panasonic®, JVC®, Canon®, and Hitachi/RCA® NiCad or Nimh batteries
- Three-way detection (Negative Delta V, Peak V, and Delta Temperature Slope sensing) guarantees full charging of battery packs
- Special “top-off charging” after full charge detection
- Automatic cycle reconditioning
- Battery status indicators during charging and reconditioning
- Trickle charging maintenance after fast charge is complete
- Abnormal battery detection
- Overcharge protection

Please read this manual before using your charger; it explains how to operate this product. Figure 1 illustrates the components.

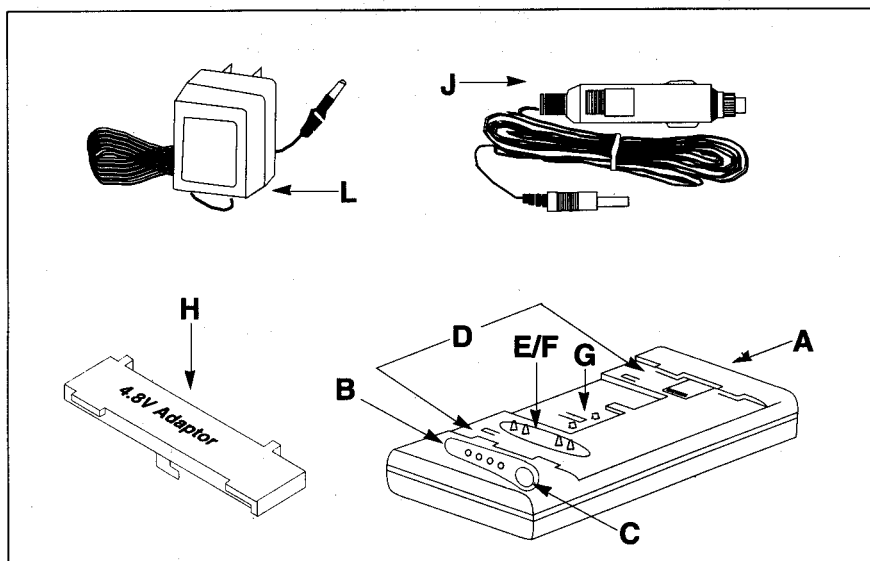


Figure 1

- | | |
|--|--|
| A. Power Input Socket | G. Canon®-Type Battery Contacts |
| B. Battery Status Indicator | H. 4.8V Adapter Plate for a 4.8V Battery |
| C. Discharge Button | J. 12V DC (car cord) Power Adapter |
| D. Hitachi®/RCA®-Type Battery Contacts | L. 110/115V AC (house current) Power Adapter |
| E. Sony®/Sharp®-Type Battery Contacts | |
| F. Panasonic®-Type Battery Contacts | |

Operating Instructions

This section explains how to power the charger, load battery packs onto the charger, and discharge and charge your camcorder battery.

Powering the Battery Charger

House Current - Plug the house current adapter (L) into any 110/115V AC (house current) wall outlet; then, plug the other end into the charger's power input (A). See Figure 2a.

Car Cord - Plug the car cord power adapter (J) into the car's cigarette light socket; then, plug the other end into the charger's power input (A). See Figure 2b.

The PWR light will come on, indicating that power is applied.

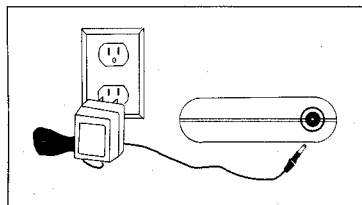


Figure 2a

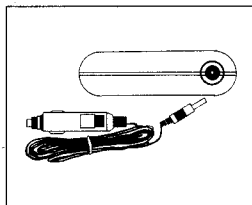


Figure 2b

Loading a Battery onto the Charger

Note where the guides and contacts on the battery are located and align them with the guides and contacts on the charger's platform. Slide the battery onto the charger platform as indicated. You should not have to force the battery onto the charger. If it does not easily slide into the guides, re-align the guides and contacts.

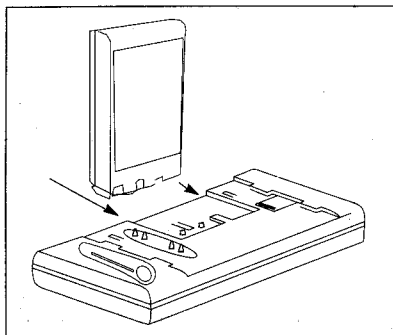


Figure 3a

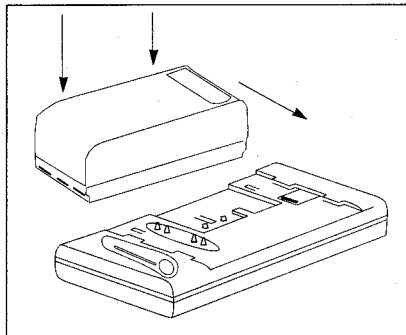


Figure 3b

Figures 3a & 3b illustrate how to load typical 6-volt standup-type batteries or laydown-type batteries.

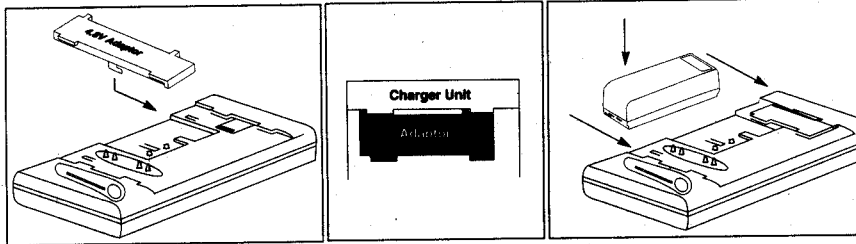


Figure 4a

Figure 4a Detail

To install the 4.8V adapter plate onto the charger platform, hold the charger as shown in Figure 4a, align the L-shaped metal hook into the slot on the charger (see Figure 4a Detail), and slide to the right to be flush with tabs, and adapter will slide into place. (When removing, simply slide adapter to the left and lift out.) When installed, it automatically switches the charger to a 4.8-volt mode. Figure 4b

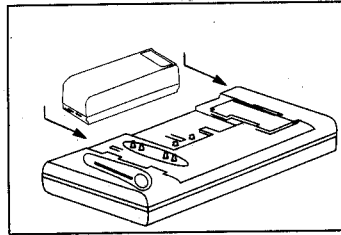


Figure 4b

illustrates how to install a 4.8V battery onto the charger with the 4.8V adapter plate in place.

Note: Do not try to charge 6V batteries with the adapter in place.

Battery Indicator Modes

- = Off
- = Flashing
- (A) = Amber
- (R) = Red
- (G) = Green

When battery is installed, you will see one of the following:



Normal



Battery not correctly installed, or dirty contacts. Remove battery and clean contacts; re-install.



Battery fully charged. Either use battery without charging, or press discharge when CHG light is on.



Battery excessively discharged or shorted. Unit will attempt to bring battery to normal and then charge. If indicator continues to flash for more than 5 minutes, battery may be defective.

Operational Overview

It is recommended to fully discharge your battery before charging. To start the discharge mode, press the discharge button. The unit will automatically switch to the charge mode when the discharging is complete. Although not recommended, you can simply insert your battery and the unit will go automatically into the charge mode.

Discharge/Charge Mode

Load the battery pack onto the charger platform and press the discharge button (C) one time to start the discharge mode.



The charger immediately begins discharging the battery.



The LEDs on the battery status indicator will light, indicating how much the battery is discharged.



When the discharge is complete, the charger automatically goes into the fast-charging mode.

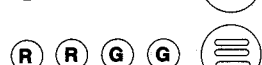
Note: Depending on the size of battery and remaining charge, the discharge time could range from minutes to hours.



The battery status indicator will change



as shown in diagrams to the left,



indicating the current charge level.

Once the 100 level is reached on the battery status indicator (B), you may remove the battery for use; however, it is recommended that you leave the battery on the charger

for at least 30 minutes longer to “top off” the battery.

Note: Because of the SPM-12N’s 8-hour safety feature, batteries greater than 3,000 mA-hr may require a second charge cycle to fully charge the battery. Simply remove the battery for a few seconds and then re-install the battery. **Do not** press the DISCHARGE button. When all the indicator lights are lit, the battery is fully charged.

Charging Mode

The moment you correctly load the battery onto the charger platform, charging begins. The battery status indicator (B) will light at a specific level reflecting how much the battery is charged (see diagrams on previous pages).

After the battery status indicator LEDs show the battery is fully charged, the charger will continue to supply a small pulse of current to the battery to “top off” the battery pack to ensure peak performance. This “top off” process will last for one hour. After that, the charger automatically switches to a small charging current to keep the battery pack in the peak charge state.

Once the 100 level is reached on the battery status indicator (B), you may remove the battery for use; however, it is recommended that you leave the battery on the charger for at least 30 minutes longer to “top off” the battery.

Important Note 1: After charging a camcorder battery using the car cord (J), remove the battery from the charger and unplug the car cord from the car’s cigarette lighter socket; otherwise, it may drain the car battery.

Important Note 2: After charging a camcorder battery, remove the battery from the charger within 24 hours; otherwise, damage to the battery may result.

Safety Precautions & Maintenance

CAUTION: Use this product on a flat, heat-resistant surface. Do not block ventilation holes.

DO NOT use this charger inside a drawer, a closed cabinet, or cover with a cloth. The heat from discharging may damage the charger or battery pack. This charger will become slightly warm during use.

DO NOT attempt to open the unit. Doing so will void your warranty.

DO NOT short circuit the output terminal or contacts.

DO NOT allow moisture of any kind to come in contact with the charger. Never immerse in water for any reason.

DO NOT store in areas which may expose the charger to extreme temperatures. Avoid placing in direct sunlight, such as on a car dashboard. High temperatures will shorten the life of electronic devices, damage batteries, and warp or melt plastics.

DO NOT drop the unit. A severe jolt may cause permanent damage and is not covered by the warranty.

Trouble-shooting

Problem	Possible solutions
No lights	<ul style="list-style-type: none">- Make sure unit is plugged into a working wall outlet- Check power cord- Check fuse in DC power cord
PWR light only	<ul style="list-style-type: none">- No battery installed- Re-install battery- Clean battery contacts
CHG light blinking	<ul style="list-style-type: none">- Battery fully charged and may not need to be charged (page 6)
CHG / 50% / 100% blinking	<ul style="list-style-type: none">- Defective battery- Excessively discharged battery; wait 5 minutes to see if SPM-12N goes into normal charge mode (page 7)

Technical Specifications

Input:	12-volt DC
Stand-by Current:	20 mA
Charging Current:	500mA constant current
Charge Termination:	- ΔV , peak voltage Δ temperature slope, maximum time
Discharge Current:	350 mA for 6-volt pack; 200 mA for 4.8-volt pack
Discharge End:	5.0v for 6-volt pack; 4.0v for 4.8-volt pack

Approximate Charge Times:

Battery Capacity (mA-hr)	Time (Hours)
800 mA-hr	1.5
1,000 mA-hr	2
1,800 mA-hr	4
2,400 mA-hr	6